Financial transactions taxes: pros, cons, design issues and revenue estimates

Background Paper

BP-418E

FINANCIAL TRANSACTIONS TAXES: PROS, CONS, DESIGN ISSUES AND REVENUE ESTIMATES

Marion G. Wrobel
Senior Analyst

June 1996

Library of Parliament
Bibliothèque du Parlement

Research Branch

The Research Branch of the Library of Parliament works exclusively for Parliament, conducting research and providing information for Committees and Members of the Senate and the House of Commons. This service is extended without partisan bias in such forms as Reports, Background Papers and Issue Reviews. Research Officers in the Branch are also available for personal consultation in their respective fields of expertise.

Available in Canada through
your local bookseller
or by mail from
Canada Communication Group -- Publishing
Ottawa, Canada K1A 0S9

Catalogue No. YM32-2/418-1996-06E
ISBN 0-660-16809-X

CE DOCUMENT EST AUSSI PUBLIÉ EN FRANÇAIS

CANADA
LIBRARY OF PARLIAMENT
BIBLIOTHÈQUE DU PARLEMENT

FINANCIAL TRANSACTIONS TAXES: PROS, CONS, DESIGN ISSUES AND REVENUE ESTIMATES

INTRODUCTION

When G-7 leaders met in Halifax, Nova Scotia in the summer of 1995, many had hoped that the proposed Tobin Tax (named after Professor James Tobin) would be high on the agenda. This tax, applied to virtually all spot currency exchange transactions, was seen by its proponents as a way of curbing excessive currency speculation, exemplified by the earlier Mexican peso crisis. While the original rationale for the tax was to curb speculation, the revenue potential of a global tax base equal to US$1 trillion per day also had an obvious appeal. Proponents of the tax are disappointed that it was not taken seriously last year by the major governments and that it is faring no better in 1996.

Another form of transactions tax is also in the news, however. If international financial transactions cannot be taxed because international consensus is not forthcoming, why not tax domestic financial transactions instead? Speculation in bond and equity markets is considered at best only slightly less distasteful than currency speculation, and the sheer magnitude of domestic financial transactions would provide a base so large that even a miniscule tax rate could generate tens of billions of dollars annually in tax revenues. At least so say the Canadian proponents[1] of a Financial Transactions Tax (FTT).

While such taxes are now being advanced as sources of government revenue, they were promoted after the stock market crash of 1987 as a way of stabilizing financial markets. The administrations of Presidents Bush and Clinton discussed such taxes and

---

(1) J. Hemeon, "Group Campaigns for Tax on 'The Big Casino': Aiming to Replace GST with New Levy on All Financial Transactions," *Toronto Star*, 24 March 1996, p. D1.

a 50-basis-point tax was considered during the 1990 American budget deliberations. Both Presidents also proposed taxes on futures trading, ranging from 11 cents to 14 cents per transaction.

The distinct advantage of an FTT over the Tobin Tax is that it does not require international agreement to implement. Individual nations can, and do, levy such taxes. Thus there is a certain amount of international experience to examine, should the Government of Canada consider implementation.

This paper discusses a range of issues related to a financial transactions tax. The first part looks at the more theoretical issues: what the tax is, why it is suggested and why it is opposed. The next part considers some of the design issues that should be dealt with if the government considers implementing such a tax. Finally the paper looks at revenues from FTTs, in theory and in practice, and attempts to provide some estimates of amounts that could be realized for Canada.

This paper makes frequent reference to the international experience with FTTs. The reader may wish to consult the companion piece BP-419, *Financial Transactions Taxes: The International Experience and the Lessons for Canada.*

WHAT IS A FINANCIAL TRANSACTIONS TAX?

A Financial Transactions Tax can be thought of broadly as any tax, fee, duty, etc. imposed by a government upon the sale, purchase, transfer, or registration, of a financial instrument -- it is, for the most part, a turnover tax. It can be broadly based or it can exempt a variety of instruments, or transactions by certain types of traders. It can be an *ad valorem* tax or a specific tax. It can be levied against transactions by Canadians or it can be levied against transactions in Canada, or both. And the law can levy the tax on buyers (as in the United Kingdom), sellers (as in Japan), or both (as in France). To avoid confusion, the tax rates used here represent the total tax cost of a "round trip" transaction, i.e., a purchase and sale. The economic incidence of the tax will, of course, depend upon market factors.

As a general rule, FTTs in other jurisdictions do not tax activities such as bank withdrawals, cheque writing, or obtaining financing for a car or home. Although some groups proposing an FTT in Canada do seek to tax such transactions, because of the size of the

potential tax base, to do so would make Canada relatively unique. Consequently, the discussion here will be restricted to the more conventional use of the tax.

In Brazil, a temporary tax of 25 basis points[2] on bank withdrawals was introduced in 1993, with a variety of special measures for withdrawals of salary, pension benefits etc.[3] This tax was, however, intended as a temporary measure in response to a financial crisis and it was eliminated at the end of 1994.

The ultimate impact of an FTT on markets will depend upon the characteristics listed above as well as the financial environment. The consequences in a large economy or a closed one with little capital mobility will be different from those in a small, open economy where capital can flow freely across borders. The net impact on government revenue will also depend upon the environment in which the tax is implemented as well as upon its design.

The international experience shows a wide variety of tax designs. Often, transactions outside national boundaries are not subject to tax; where they are so subject, they pose considerable enforcement problems. Trading in national government securities, and the trades of specialized traders (such as market makers or others providing liquidity to the market) are often not subject to tax or, in the latter case, may be subject to reduced tax rates. These features can significantly reduce the tax base upon which the FTT is applied.

A. The Benefits of Taxing Financial Transactions

The earliest notable proponent of a tax on financial transactions was John Maynard Keynes, who believed that investment in real capital and trade, not speculation, should be the basis for financial transactions. As he put it, "It is usually agreed that casinos should, in the public interest, be inaccessible and expensive. And perhaps the same is true of Stock Exchanges."[4] Thus, to use the now famous phrase of Professor James Tobin, we should "throw some sand in the gears of financial markets" to slow down and discourage speculative trading.

---

(2) A basis point is equal to one-one hundredth of a percentage point.

(3) "Brazil: Financial Transactions Tax," *International Tax Digest*, Vol. 5, No. 3, May-June 1993.

(4) J.M. Keynes, *The General Theory of Employment Interest and Money*, Harcourt Brace and World Inc., New York, 1935, Chapter 12, p. 159.

Most of the academic proponents of such a tax hold this view. They believe that financial markets are complex and costly institutions that are too efficient and that do little more than reallocate existing wealth. While the gains to society from such activities are small or negligible, in their view, the potential gains to individual investors can be great. Consequently, such speculative activity diverts large amounts of resources and very talented human capital away from socially beneficial activities. Moreover as the financial sector grows, the government must devote more resources to policing it, while fewer resources are available for the financing of real economic production. Proponents of the tax note that top American business school graduates seek positions in the financial sector while their Japanese counterparts go into manufacturing.[5]

Worse still, short-term trading due to speculative activity might actually weaken the ability of financial markets to support the real economy. Short-term trading is believed to increase market volatility. Since excessive volatility increases risk, thereby raising the cost of capital, firms find it more difficult to procure the financing needed for real investment. Moreover, such excessive volatility could be associated with a reduction in the efficiency of capital markets, resulting in reduced economic welfare. Short-term traders are seen as "noise" or "fad" traders who base their decisions on information that has nothing to do with the intrinsic or fundamental value of financial investments. Because they move with the herd, these traders cause prices to rise excessively in bull periods and to fall excessively in bear periods. This causes resources to be misallocated, because investors face price signals that are misleading indicators of the fundamental value of certain investments.

All of this is due to trading based on irrational "animal spirits," rather than on the true value of investments, their dividends and future earnings prospects. These characteristics lead to very short-term investments where the commitment to hold shares is subject to a wide variety of influences, inducing waves of optimism or pessimism. Raising the cost of such trading should reduce its incidence, resulting in more efficient markets, less volatility and lower cost capital.

---

(5) L.H. Summers and V.P. Summers, "When Financial Markets Work Too Well: A Cautious Case for a Securities Transaction Tax," *Journal of Financial Services Research*, 1989, p. 261-86.

Conventional wisdom holds that portfolio managers in North America suffer from myopia, because they are hired and fired on the basis of quarterly results. This myopia becomes contagious as firm managers, who are concerned about their stock prices, must also take a short-term view. An FTT should discourage such behaviour because it disproportionately taxes short-term traders, who trade more frequently. If the tax succeeds in driving irrational investors out of the market, efficiency should be enhanced.

As the idea of an FTT moves from the academic to the political realm, the market effects become subservient to another anticipated benefit, namely the fact that a tax would generate revenues for governments. As the players at the "big casino" are typically perceived to be large institutions, highly-paid traders, investment managers, and wealthy individuals, the tax is promoted as not directly affecting the majority of Canadians and as being very progressive in its impact.

B. The Costs of Taxing Financial Transactions

Just as the proponents of an FTT cite a variety of arguments in its favour, so the opponents of the tax counter these with their own theoretical and empirical arguments.

In the first place, those who decry the "wasted" resources associated with financial activity might be surprised at all the similar activity that could be generated by a tax. History is full of examples of attempts to avoid taxes, and financial innovations designed merely to circumvent them, all of which require ever greater government oversight and expense to counter. Because of the innovative skills of accountants and lawyers, these side effects are hard to predict.

Two American examples of such innovation include the development of money market mutual funds designed specifically to provide savers with an alternative to interest rate-capped deposit accounts, and the zero-interest bonds that until 1982 were used to exploit loopholes in the American income tax code.[6]

While the arguments above link market volatility to short-term trading, they hinge on the belief that short-term traders are by nature destabilizing speculators. Some

---

(6) J.J. McConnell, *Securities Transaction Taxes: What Would Be Their Effects on Investors and Portfolios?*, Catalyst Institute, Chicago, Ill., July 1993.

speculators, however, can stabilize a market and a tax that has a disproportionate impact on short-term traders would affect these speculators too.

Financial markets are volatile, since information about the value of securities is costly. Are they too volatile and has this volatility increased recently? The empirical evidence does not clearly support that thesis. Transactions costs in the United States have fallen rapidly due to deregulation of financial services and enhanced competition. Trading volumes have consequently grown and are relatively higher in the U.S. than in other countries. Yet there is no clear evidence that the United States is today a more volatile market nor that volatility has grown in response to this higher trading volume.[7] Indeed during the 1987 stock market crash, stock prices fell more in some countries with FTTs than they did in Canada or the United States, countries without such taxes (see Figure 1). While it is also true that prices declined by a lesser amount in some countries with FTTs, such as Germany, Austria, and Japan, national stock price declines showed no evidence of being affected by the existence or size of such taxes.[8]

Furthermore, the distributional impact of an FTT might not be as desirable as expected. It is true that wealth holdings rise more than proportionately with income. But institutional investors are becoming increasingly important players in financial markets, and their clientele is much more broadly representative of Canadian society. More importantly, however, if the introduction of a tax caused asset prices to fall, the retired and near retired would suffer a disproportionately large impact, even though most are not rich. Pension funds, even passively managed ones, might find it difficult to meet their commitments in such circumstances.

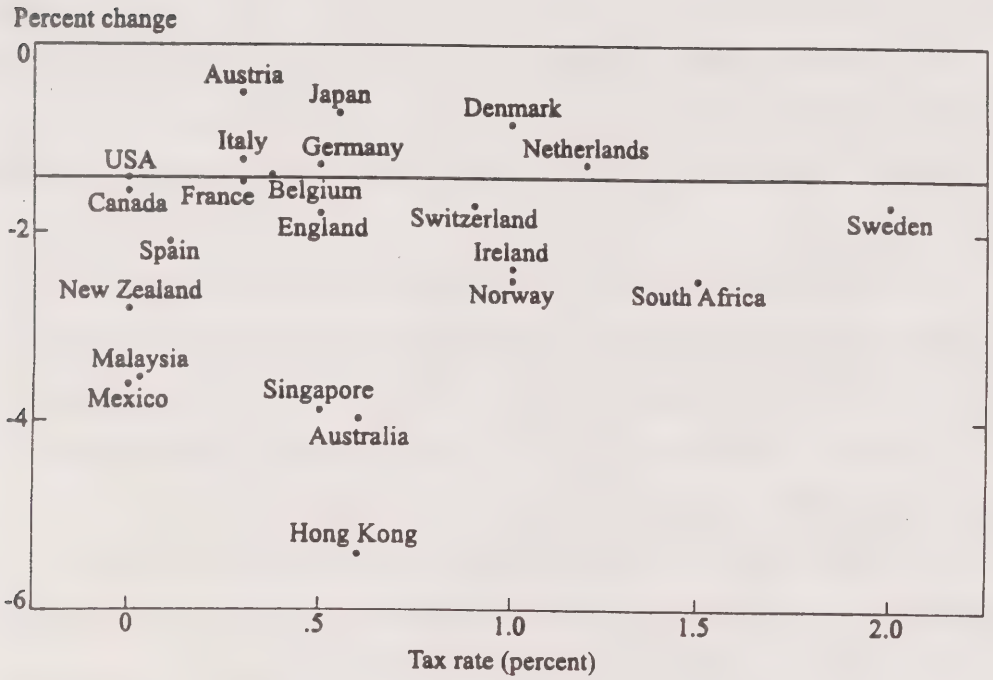
The unintended side effects of an FTT would not stop there, however. Such a tax could reduce the efficiency of capital markets if it created inertia amongst investors. If investors did not react to new information, the prices of securities would not reflect true economic value and financial resources would not be allocated efficiently. This would raise the cost of capital and hence reduce the amount of capital formation. The long-run consequences would be a reduction in productivity and hence real wages.

---

(7) P. Shome and J.G. Stotsky, *Financial Transactions Taxes*, IMF Working Paper WP/95/77, August 1995.

(8) C.S. Hakkio, "Should We Throw Sand in the Gears of Financial Markets?" Federal Reserve Bank of Kansas City, *Economic Review*, Second Quarter, 1994.

FIGURE 1
FTT RATES AND THE OCTOBER 1987 DECLINE IN STOCK PRICES



Note: The vertical axis is the percent change in stock prices for the period one week before the October 1987 stock crash to two weeks after the crash. The horizontal line is the average percentage of decline in U.S. stock prices.

Source: C.S. Hakkio, "Should We Throw Sand in the Gears of Financial Markets?" Federal Reserve Bank of Kansas City, *Economic Review*, Second Quarter, 1994.

In the final analysis, the impact of an FTT on the workings of financial markets can only be settled empirically, as there are theoretical arguments on both sides. This is also true of the tax revenue arguments; opponents believe that revenue estimates are overstated and that in the end the revenue benefit of the tax does not outweigh the negative side effects.

TAX DESIGN ISSUES

As with the design of any tax, some obvious questions come to mind with respect to an FTT. Is there anything apart from creating revenues that we wish the tax to accomplish? Whom do we wish to tax? Why? Which transactions do we wish to tax? How much do we wish to tax them?

An FTT can have very dramatic implications for financial markets and these might well temper our original thoughts. For example, should money market instruments (those with a term to maturity of less than one year and as low as 30 days) be taxed? If we believe that all financial instruments should be treated equally, then the answer is yes; otherwise the tax would distort individual choices about financing instruments.

A 90-day treasury bill must be rolled over four times per year and, if taxed, would therefore pay four times the tax paid by a one-year bond held to maturity. One solution would be to ensure that the initial purchase of a debt security and/or the redemption of the security upon maturity was free from tax. Another approach would be to use variable rates for securities with different maturities. This approach has, however, proven to be fraught with difficulties. Such solutions should, in general, have only a minor impact on the tax base.

But even such solutions might not be sufficient. Money market instruments provide institutional investors such as mutual funds with a temporary place to keep money until they decide where to invest it. In this sense, these instruments are like cash -- they are not an investment in themselves but only an intermediary to a longer-term investment. For the Bank of Canada, they are an instrument whereby monetary policy is conducted. For financial institutions in general they constitute tools that enable adequate income-earning reserves to be held in support of investments.

Money market instruments are favoured for their safety and liquidity. No-one speculates against them. Taxing transactions in money market securities would merely increase the cost of government borrowing and reduce the value to markets of this very useful tool. They have close substitutes in the form of banking products and, as a result of these factors, many countries with an FTT exempt money market instruments.[9] The Swiss did not do so and consequently a money market never really developed in Switzerland. The companion to this paper (BP-419) cites the case of Sweden, where a 20% drop in money market trading resulted from a tax of only one-fifth of one basis point.

On the other hand, if money market instruments were exempted from an FTT, the potential tax base shown in Table 2 below (p. 20) would decline by almost two-thirds. If only federal Treasury Bills were exempted from the tax, the base would fall by about 43%.

Many governments do not tax any government securities and the American proposals in 1990 exempted all federal bonds. This exemption recognizes that the tax would generally be fully reflected in borrowing costs. Exempting federal bonds would reduce the tax base by another 31%.

If the tax exempts federal, or all government, securities, be they short-term or long-term, an obvious distortion is created with respect to private sector debt. And if all debt securities are exempt from tax, they become more attractive to investors than equity securities. In such a case firms might wind up with higher debt-to-equity ratios in order to exploit this preference, making the corporate sector all the more risky.

There are many additional design issues. Countries with FTTs often exempt primary transactions, such as the issue of new stock or debt instruments, although there are some notable exceptions. By taxing these activities, the government would distort firms' choices regarding external and internal financing of projects and put small, rapidly growing and capital hungry firms at a disadvantage. Exempting primary transactions has a negligible impact on the potential tax base, as shown in Table 2.

Many financial transactions are also intermediary to the ultimate goals of the investor. The purchase and sale of mutual fund shares is an example -- taxing such

---

(9) R.G. Hubbard, *Securities Transactions Taxes: Can They Raise Revenue?*, Catalyst Institute, Chicago, Ill., July 1993, p. 5.

transactions as well as the transactions of the fund itself would lead to double or even multiple taxation, which in turn could lead Canadians to invest in American mutual funds. Other transactions are employed simply to hedge risks associated with some other transaction -- this is particularly true of derivative products. With competitive markets, all the taxes imposed on these intermediary transactions would be borne by the consumer.

Another problem facing the design of an FTT concerns the role played by market makers. A market maker is a broker who holds inventory in a particular stock or stocks and provides liquidity to the market when other buyers and sellers do not. Such transactions account for one-fifth of the trading on the New York Stock Exchange and the precentage is likely to be similar in Canada. These specialists are even more important players in the trading of futures contracts or trading in over-the-counter markets such as NASDAQ in New York or the Canadian Dealing Network in Toronto. Imposing taxes on the trades of intermediaries and market specialists would likely drive up the cost of market liquidity by raising their bid-ask spreads.

Would a Canadian FTT attempt to tax offshore transactions by Canadians? American proposals that such transactions be taxed pose substantial enforcement difficulties. Appealing to international co-operation in this regard would not solve the problem as numerous countries would be happy to become centres for such international financial transactions.

The financial market contains numerous products that are close substitutes. A government bond is a close substitute for a high-quality corporate bond. Treasury Bills are close substitutes for other money market instruments. Bank deposits are substitutes for money market funds.[10] Taxing one set of products would encourage investors to seek out non-taxed substitutes. Investors can also generate similar risk and return characteristics with investments in equities or in derivative products. It is very difficult to tax derivatives in a manner that is

---

(10) An indication of how one product might mimic the characteristics of another is Citibank's introduction in 1993 of a certificate of deposit, equivalent to our GICs, which offered an interest rate that was linked to the performance of an index of stocks. See: B. Granito, "New Derivatives Products are Surprisingly Complex," *Wall Street Journal*, 9 April 1993. Canadian banks also offer such products. Scotiabank offers a two-year GIC whose return is equal to the performance of the Toronto 35 Stock Index. The minimum return on this GIC is 0% over two years and the maximum return is 30%.

neutral with respect to other financial products. Not doing so, however, generates inefficiencies and unfairness and will erode the tax base.

A small tax generates little distortion and tax avoidance activity, although the Swedish experience suggests that in some markets and for some products, even a "low" tax rate might prove to be excessive. But administration and compliance costs contain fixed and variable components and a small tax might generate revenues that were very low in relation to those costs. Given the nature of the institutions involved in such transactions, the administration costs for the government might be minor but compliance costs for the private sector could still be high. The international experience is that the tax is imposed on buyer or seller, not on the intermediary. Large numbers of individual records must be kept, both for the benefit of the taxpayer and for the benefit of the government wishing to audit and enforce the tax.

In general, a broad base is more neutral in effect than a narrow base, because there are fewer untaxed alternatives. Some parts of the base are, however, inherently untaxable or at least very difficult to tax. Attempting to tax these might just lead to enforcement difficulties and high enforcement costs, high government administrative costs in general and a host of unforeseen consequences.

It would probably prove impossible for an FTT not to favour one product over another, no matter how broadly the tax was applied and how carefully it was designed. For example, it was noted above that investments in mutual funds could lead to double or higher taxation. One solution would be merely to exempt from tax the purchase or sale of mutual fund shares. This, however, could create new problems. Mutual fund companies offering investors the opportunity to switch investments amongst a family of funds would be advantaged over stand-alone firms. A major loophole might be the development of specialized mutual funds holding only one security or small set of securities.[11] Investors, including other mutual funds, could then effectively trade securities by buying and selling mutual fund shares, without paying any FTT.

The problem in designing an FTT is that every financial product, including banking and insurance products, has a close substitute elsewhere. These substitutes could be

---

(11) McConnell (1993).

equities, fixed-income securities or derivative products, or some combination of these. New products, moreover, can develop rapidly, easily and unexpectedly to mimic the income, risk or ownership characteristics of other products. The government could find itself in a perpetual race to keep up with financial innovation so as to ensure that the FTT was neutral in effect and not a source of innefficiency to the economy.

POTENTIAL REVENUES FROM AN FTT

In the final analysis, we might conclude that an FTT has no great effect, good or bad, on the workings of financial markets. Even so, there might still be cause for taxing financial transactions as a way of raising needed government revenues and introducing some amount of neutrality into a tax system that taxes a wide range of non-financial transactions and services.

Since Canada has no experience with an FTT, it will be instructive to look at the international experience and at academic estimates before trying to establish our own revenue estimates. First, however, we should look at some of the factors that would go into any estimate of government revenues.

A. Revenues in Theory

Revenues from an FTT can be expressed by the following equation:

$$REV = t(P+\Delta P)(Q+\Delta Q) + \Delta OTHREV - \Delta EXPEND$$

where:
REV is federal revenue from the FTT
t is the FTT tax rate
P is the average price of securities subject to tax
Q is the number of transactions
OTHREV is other federal government revenue
EXPEND is federal expenditures.

The delta sign (Δ) signifies changes in a particular variable.

If an FTT had no impact on financial markets and imposed no additional administrative or compliance costs, the above equation can be expressed simply as:

$$REV = tPQ.$$

In such a simple world, tax revenue would equal the tax rate multiplied by the total value of transactions, i.e., the quantity of transactions multiplied by the average price. In this case it would be a simple matter to calculate tax revenue: we know the volume of transactions quite accurately; multiplying that volume by the tax rate gives the total tax revenue. In such a simple world, a one-basis-point tax on the transactions in Table 2 (p. 20) would generate revenues of $1.06 billion.

It is, however, unrealistic to suppose that an FTT would have no impact on financial market behaviour. Consequently, the more complex equation needs to be used. This equation suggests four possible ways in which a transactions tax might have an impact on total tax revenues.

The value of transactions can change for two reasons: an FTT could affect the volume of transactions as well as the price of securities traded. That the number of transactions might decline is not surprising; this is seen as one of the virtues of an FTT. What is not so clear is the magnitude by which transactions would fall. The average price of securities traded might also change, however. It might increase but it would be more likely to fall.

Two indirect effects also cannot be ignored. Other government revenue could change as a result of an FTT. In particular, if the tax had an impact on the average price of securities, capital gains or losses would be generated, affecting income tax revenues. This impact would either add to or subtract from FTT revenues. As well, other tax revenues could fall if business financing costs rose, or if the tax added to compliance costs. For example, suppose a firm that had previously financed its working capital by issuing one-year corporate paper at a 6% interest rate were to face a 15-basis-point FTT. If it could find alternative financing from a financial institution at 6.1% per year, it would do so. Not only would an FTT-taxable transaction be replaced by a non-taxable one, the higher cost of borrowing would reduce corporate profits and thus reduce the government's corporate income tax revenue.[12]

In addition, an FTT could affect the cost of government borrowing -- this is an important consideration for Canadian governments, which are already heavily burdened by debt. All governments, but especially the federal government, rely heavily on short-term debt instruments to finance their deficits, past, present and future. A 90-day Treasury Bill is rolled

---

(12) A question that ultimately needs to be addressed is whether the FTT liability is to constitute an expense for income tax purposes. If so, then income tax revenues would be reduced directly whenever the tax was paid.

over four times per year, even if held to maturity. If each rollover cost an investor FTT tax, these instruments would be less desirable than longer term instruments; thus, governments would have to pay more for such bills or do their financing on longer terms. The government today enjoys a substantial interest rate advantage on 90-day T-Bills; it is likely that an FTT on such transactions would be reflected entirely in higher borrowing costs to government.

Yet even this understates the effects on governments and other Canadian borrowers. Canada is a small, open economy that is, on balance, a net borrower from the rest of the world. Non-residents lend more to Canadians than we lend to them, and it is unlikely that Canadians could, through an FTT, force them to take a lower return on their money. Similarly, Canadians already invest in the rest of the world, primarily the United States, where no FTT exists; a domestic FTT would make such investments even more desirable. Consequently, we would have to accept the world real rate of interest and bear the full cost of any FTT. Any new government borrowing would bear the full cost of an FTT and any new private borrowing would do so as well, leading to lower profits and lower corporate income tax revenues for governments.

There are also administration costs associated with any tax, especially a new one. These costs are of both the fixed and variable type so that a low tax rate would probably exhibit less administrative efficiency than a higher rate. The size and nature of the tax base will also affect administration costs -- the broader the base, the greater these costs will be. It would be relatively expensive, for example, to administer and try to enforce a tax applied to Canadians' financial transactions abroad.

No Canadian tax can be discussed without mentioning the federal-provincial aspects. The FTT would be a federal tax but it would have provincial consequences. On balance it should cause provincial net revenues to fall. This decline would be due to a reduction in the provincial tax base caused by lower capital gains, higher operating costs to business, higher financing costs to business, and the possibility that the FTT might constitute a business expense. The FTT would also affect provinces to the extent that it raised their borrowing costs.

B. Some Empirical Considerations[13]

Average Securities Prices: Proponents of an FTT argue that, by reducing volatility, the tax would reduce risk in financial markets and thus increase the price of financial securities. This would be true only if volatility was actually reduced, however. If volatility remained the same, or even grew, prices would not rise. Most of the empirical evidence suggests, on the other hand, that prices would fall.

Several studies have suggested a wide range of possible estimates for declines in asset prices. For example, it has been estimated that a 0.5% broadly-based FTT would reduce prices of all stocks on the New York Stock Exchange by as little as 1.2% to 7.7%, or as much as 13%. For very liquid stocks, the price decline could be as high as 18%. (These price changes are in addition to the normal variation in prices that occurs in financial markets.)

There are several reasons for these estimates. Taxing any product that has untaxed substitutes will inevitably lead to some price decline. And, since the ultimate transactions costs associated with any security will increase with the imposition of an FTT, asset prices have to fall in order to maintain a competitive rate of return; that is, the expected future tax liabilities become capitalized in the price of the security. The prices of those assets that trade more frequently will decline more, in order to compensate for the larger total tax bill. Liquid stocks will suffer a relatively large price decline because they trade frequently. The evidence from the Swedish FTT is consistent with this interpretation.[14]

Volume: Opinions differ with respect to the impact of the FTT on asset prices, but there is no difference of opinion as to its impact on trading volume. Increasing the cost of a financial transaction should reduce its volume, just as raising the price of any good reduces the quantity demanded. Financial transactions appear to be particularly sensitive to price. The extent of this sensitivity depends very much upon the alternatives available to the investor and upon the pre-tax transactions costs of an FTT. The biggest impact will likely be on institutional traders;

---

(13) G.W. Schwert and P.J. Sequin, *Securities Transactions Taxes: An Overview of Costs, Benefits and Unresolved Questions*, Catalyst Institute, Chicago, Ill., April 1993; McConnell (1993); Hakkio (1994).

(14) S.R. Umlauf, "Transaction Taxes and the Behavior of the Swedish Stock Market," *Journal of Financial Economics*, 33 (1993), p. 227-240.

these are not only the largest traders but their trades also have by far the lowest transactions costs.

It has been estimated that a 0.5% broadly based tax would reduce American trading volumes by about 8%. Other studies suggest stronger effects. Estimates of the elasticity[15] of turnover with respect to transactions costs range from a low of -0.26 based on data for 1968, to -1 using Swedish data and -1.7 using English data.[16] Another study has concluded that long-term American trends in transactions volumes are consistent with an elasticity of -2 to -3.[17]

The two variables discussed above are directly and inversely related. If the turnover of a particular security is expected to fall dramatically in response to a tax, then the price of the security will remain relatively stable, as there is little tax to be capitalized. If on the other hand, turnover is expected to remain stable, then there will be more tax to be capitalized into the security so its price will fall to a greater extent.

The literature has little to offer empirically about the indirect effects of an FTT. The case of Sweden suggests, however, that the loss of indirect revenues will offset much of the direct FTT revenues.

C. Revenue Estimates for Canada, Based on the International Experience

Table 1 presents an international comparison of direct revenues from FTT-type taxes in the mid 1980s. It measures revenue against three different bases to give some indication as to the revenue fertility of these taxes.

The table is of only slight help in estimating FTT revenues for Canada. Switzerland, with a tax rate not much different from that of Germany, raised twelve times as much revenue in relation to the size of the economy. Switzerland's role as a safe financial haven has resulted at times in an undesirably strong currency due to large capital inflows. The

---

(15) Turnover elasticity measures the responsiveness of turnover to changes in costs. An elasticity of -0.5 indicates that a 1% increase in costs will reduce turnover by 0.5%. An elasticity of -2 indicates that a 1% increase in costs will reduce turnover by 2%.

(16) Hubbard (1993).

(17) A.W. Lo and J.C. Heaton, *Securities Transaction Taxes: What Would Be Their Effects on Financial Markets and Institutions?*, Catalyst Institute, Chicago, Ill., December 1993.

Swiss system of financial taxes was at times designed specifically to stem this capital inflow,[18] and this might well be the effect being picked up. Canada does not suffer from this problem.

TABLE 1
TRANSACTIONS TAXES AND REVENUES

COUNTRY	TAX (in basis points)	TAX REVENUE AS A PERCENTAGE OF:		
		TOTAL REVENUE	GNP	MARKET VALUE OF EQUITY
FRANCE	30 & 15	0.26%	0.12%	1.19%
GERMANY	25	0.14%	0.04%	0.28%
ITALY	15	1.10%	0.38%	6.10%
JAPAN	18 & 55	1.42%	0.17%	0.34%
NETHERLANDS	50 on small trades	0.63%	0.32%	1.17%
SWEDEN	100	0.87%	0.36%	1.55%
SWITZERLAND	15 & 30	2.33%	0.48%	0.94%
UNITED KINGDOM	50	0.80%	0.30%	0.01%
UNITED STATES	various state taxes	0.17%	0.03%	0.08%

Source: L.H. Summers and V.P. Summers, "When Financial Markets Work Too Well: A Cautious Case For a Securities Tax," *Journal of Financial Services Research*, Vol. 3, 1989, p. 275.

Italy, with a relatively low tax rate, generates an impressive amount of revenue. But its tax revenue as a proportion of the market value of equity is so out of line with that of the other countries, and so large, that it appears untenable. The UK tax, which also brings in an ample amount of revenue, taxes away only 0.01% of the market value of equity, far out of line with other taxes, like that in Germany, that raise less revenue.

All these contradictions suggest that the design and implementation of taxes vary substantially, and in a way that cannot be captured easily in tabular form.

As a rough estimate, one might obtain possible revenue estimates for Canada in 1996 by extrapolating from the tax to GNP ratios presented in Table 1. Revenues range from $300 million (Germany), $1.275 billion (Japan), $2.25 billion (United Kingdom), to a maximum of $3.75 billion (Switzerland).

---

(18) P.B. Spahn, *International Financial Flows and Transactions Taxes: Survey and Options*, IMF Working Paper WP/95/60, International Monetary Fund, Washington, D.C., June 1995.

In 1990, the American Congressional Budget Office (CBO)[19] calculated that a broadly based, 50-basis-point FTT on all securities transactions in the United States and all foreign transactions by American nationals would raise about US $13.4 billion in fiscal year 1995, equal to about 0.2% of GDP. This translates roughly into Canadian revenues of $1.5 billion. For the purposes of the CBO calculation, the only transactions exempted from tax would be the purchase and sale of U.S. Treasury securities.

The annual take from British taxes and duties on financial transactions is about £800 million. When numbers are applied to the American market, they estimate revenue of US$7 billion per year if scaled up by the capitalized value of the American equity market, or US$11 billion if scaled up by the trading volumes in the United States.[20] On the surface these estimates seem easily to confirm the CBO estimates, since the UK taxes are not applied to fixed income securities. But, as Froot and Campbell point out, transactions costs in the United States are the lowest of any in the major financial markets, which explains that market's high trading volumes. Even a small FTT would have a disproportionately high cost on total transaction costs and consequently a disproportionately large impact on trading volumes.

Using the above technique to extrapolate Canadian revenues from the British data produces relatively low revenue estimates: $550 million if based upon capitalization and $730 million if based upon trading volumes. In 1995, for example, the value of trades on the Toronto Stock Exchange was about 5% the value of those on the New York Stock Exchange. The capitalization of stocks on the TSE was about 6% that on the NYSE.[21]

The reader should note that these estimates for Canada are based upon the tax designs used in other countries. These generally employ high rates of tax on equities and small or non-existent taxes on debt securities, especially government debt.

---

(19) United States Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, Washington, D.C., February 1990, p. 388-389.

(20) K.A. Froot and J.Y. Campbell, *Securities Transactions Taxes: What About International Experiences and Migrating Markets?*, Catalyst Institute, Chicago, Ill., July 1993.

(21) Toronto Stock Exchange, *1995 Official Trading Statistics*, Toronto.

D. Independent Revenue Estimates

The size of the Canadian "casino" in 1995 was about $10.6 trillion dollars, up from $10.1 trillion the previous year;[22] these amounts equal the total value of transactions in equities, bonds, and money market instruments, in both the primary and secondary markets. In 1995, the corporate sector issued $25.5 billion in new securities, of which $16 billion was equity and the remainder debt. Canadian governments issued $59.3 billion in new debt securities.[23] New debt instruments are issued for new financing as well as to finance older debt that has matured during the year. Primary market activity accounts for less than 1% of total activity.

The following table provides greater detail of those transactions. As it points out, equity transactions represent a very small part of total financial transactions, the vast majority of which are bonds and money market securities (i.e., fixed income securities with terms of less than one year). And about three-quarters of all trading is in Government of Canada securities. The sums are large and growing at a rapid rate. Thus this appears to be a desirable tax base.

The magnitude of this base can be sensed from the fact that 1% of $10.6 trillion is $106 billion. One-tenth of 1% (i.e., 10 basis points) of $10.6 trillion is $10.6 billion and one-one hundredth of 1% (i.e., one basis point) is equal to $1.06 billion. As is explained elsewhere in this paper, one should not view these as estimates of tax revenue -- it would be very misleading to suggest that a one-basis-point tax would raise $1 billion in tax revenue per year. The numbers are, however, helpful in giving a sense of the size of the potential tax base.

According to some, however, even this large number represents a small fraction of the potential tax base. Canadian proponents of the FTT cite total transactions of close to $53 trillion per year, which, in addition to the transactions listed in the table, include the exchange of cheques, the granting of loans and mortgages, deposits into and withdrawals from

---

(22) The Canadian convention regarding billion and trillion, which is the same as the American usage, is employed here. One billion is equal to one thousand millions. One trillion is equal to one thousand billions. Thus one trillion is equal to one million millions.

(23) Investment Dealers Association of Canada, *Capital Market Statistics*, Toronto, March 1996.

banks, etc.[24] According to this figure, the numbers in Table 2 represent only about 20% of the potential tax base.

To put the $53 trillion in better context, the Canadian Payments Association cleared $23 trillion in paper-based and electronic transactions in 1995. This does not include transactions drawn upon and deposited within the same institution, a number which, given the large size of our domestic banks, is also very large.

The following provides an estimate of the potential revenue that the federal government might enjoy from a tax on financial transactions. The calculations are based upon a 10-basis-point tax applied to transactions in equities and a one-basis-point tax on fixed income securities.

TABLE 2
FINANCIAL TRANSACTIONS IN CANADA
(in billion dollars)

TYPE OF SECURITY	1995	1994
EQUITIES	256	223
BONDS	3,595	3,307
of which:		
Government of Canada	3,298	2,992
Provincials	217	235
Corporate	39	37
MONEY MARKET	6,751	6,607
of which:		
Canada Treasury Bills	4,573	4,547
Provincial Bills	160	160
Bankers Acceptances	710	625
Corporate Paper	760	670
Banks, Trusts, Mortgage	540	570
TOTAL	10,600	10,140

Numbers do not necessarily add up due to rounding and the exclusion of minor categories.

Source: Investment Dealers Association of Canada, *Capital Market Statistics*, March 1996.

---

(24) Hemeon (1996).

When considering the implementation of an FTT in Canada, it is important to recognize that the three broad categories in Table 2 represent three different financial markets that would be affected by the tax in very different ways. The equity market represents a base of about $250 billion. Round trip trading costs for Canadian institutional investors are in the range of 80 to 100 basis points. A 10-basis-point tax represents a 10% to 12.5% increase in transactions costs. As the Canadian capital market is already very much integrated with that of the United States, trading volumes in Canada should be quite responsive to the tax. Assuming a turnover elasticity of -2, Canadian trading volumes should fall by 20% to 25%. While the elasticity figure used here is in the upper range of estimates presented in this paper, it is likely to be appropriate, given the pull of the American financial markets in Canada.

Trading Canadian shares on American exchanges does have some disadvantages: it is primarily Canadian investors, analysts and traders who are interested in Canadian shares. Thus liquidity and knowledge are more prevalent in Canada than in the U.S., making the market for Canadian securities most efficient here. This efficiency tends to ensure that prices are close to their true value. In the United States, Canadian securities represent only a minor part of the market and hence the services associated with trading them could be lacking.

Despite these difficulties, almost one-half of the value of trades of Canadian-based, interlisted shares takes place in the United States, and Canadian exchanges are very concerned about this loss of market share. Anything that enhanced the relative position of American exchanges would just make life more difficult for Canadian investors as it would encourage trading away from the natural marketplace. Canadian institutional investors already attempt to trade as much as possible in the United States to take advantage of lower trading costs. A large FTT would increase this discrepancy between American and Canadian costs.

At $3.6 trillion per year, the bond market in Canada is 13 times larger than the equity market. Trading costs are much lower than in equity markets, five to ten basis points, so a one-basis-point tax is in fact a very high rate of tax. In Sweden, a three-basis-point tax on bonds caused trading to drop by 85%. In Japan, a disproportionate share of Japanese bond offerings and trading takes place in Europe, not Japan. This feature has been attributed to the Japanese system of taxes on bond trading. Moreover, before Germany eliminated its system

of taxes, 30% of trading in German government bonds was taking place in London and another 50% of other DM-denominated bonds was trading there. To have 25% of Canadian bond trading disappear in response to a one-basis-point tax would not be surprising.

There is a more important fact to consider, however. Over 90% of trading volume is in Government of Canada bonds. Nations that have imposed FTT-type taxes have generally exempted government securities, largely in recognition of the fact that the incidence of this tax falls upon borrowers not lenders. For example, investor A, who is considering buying a government bond, realizes that he must pay tax upon the purchase and thus he is not willing to pay as much for the bond as he would otherwise have been, i.e., he demands a slightly higher interest rate. He also realizes that, should he wish to sell the bond before maturity, another purchaser would also face a tax and would take this into account in any offer to buy. And so on... If the government offers new 10-year bonds to the market, and if those bonds traditionally turn over five times in ten years, then the present discounted value of five basis points of tax will be capitalized into the initial price of the security.

Thus, while the initial direct revenues from an FTT on bonds might be in the neighbourhood of $270 million per year, the revenue gain would be eroded over time as the federal government floated new bond issues. In 1995, the federal government floated $46 billion in new issues (bonds and Treasury Bills), all of which would have cost more had an FTT been in place. Over time, as more and more of the federal stock of debt was issued under an FTT regime, more and more of the total direct revenues would come from government debt servicing costs.

Canada is a small, open economy with highly indebted governments. As a nation, we are net borrowers on international markets. It is very unlikely that an FTT could be used effectively to lower the real rate of interest that the government must pay to service its debt. Thus in the end, an FTT is largely a tax that the government imposes upon itself.

The largest component of financial transactions consists of trades in short-term debt instruments, generally referred to as money market securities. Two-thirds of this $6.8 trillion comprises trading in Government of Canada Treasury Bills. This is also a market distinct from the other two. These securities are very safe and very liquid. For corporations with good credit ratings and for governments, these securities generally represent the cheapest

form of borrowing available. Investors, however, see money market instruments largely as substitutes for cash. They are a place to park money for short periods of time, and still earn interest, until longer-term strategies can be put in place. The liquidity provided by transactions costs of one to two basis points is the reason why trading volumes are so high. For this part of the market, a one-basis-point tax is a high tax indeed and will lead inevitably to a search for alternative and tax free instruments for money management, such as bank deposits.

Money market securities are very short-term -- three-month Treasury Bills are common and, even if held to maturity, would be subject to an FTT of four basis points per year. If each was turned over only once, in addition to ultimate redemption, borrowing via these short-term instruments would cost the borrower eight basis points per year. Since the federal government is the most dependent upon this market for funds, it has the most to lose by taxing this market.

Very few countries tax money market instruments. Sweden experienced a 20% drop in trading with a tax of 0.2 basis points, one-fifth the tax rate being considered in this exercise. In Switzerland a money market was very slow to develop in the 1980s and this fact is blamed on that government's taxes on financial transactions. There is no reason to assume that Canada would be immune to such effects. Whatever direct revenues the government enjoys from the taxation of money market transactions, they would largely be offset by higher borrowing costs.

A one-basis-point tax on money market trades should result in a very substantial drop in the number of transactions. It would not be unreasonable, at first guess, to assume disappearance of 50% of trades, at a minimum. As with bonds, the ultimate incidence of most of the FTT should fall on the federal government. But these indirect effects on government borrowing costs should be almost fully felt within one year because of the short-term nature of the securities.

An estimate of the direct revenues of the federal government in year one is calculated as follows:

- $190 million from equities, assuming a 25% drop in transactions;
- $270 million from bonds, assuming a 25% drop in transactions; and

- $340 million from money market securities, assuming a 50% drop in transactions.

This totals $800 million in total direct revenues.

Ninety per cent of government bond trading is in federal government securities. If we assume that the full cost of the FTT on federal bonds was borne by the government and phased in over 10 years, borrowing costs in year one would be increased by $24.3 million. In year two they would be increased by $48.6 million, in year three by $72.9 million, etc.

If we assume that two-thirds of the FTT direct revenues from money market securities was borne by the federal government, in line with its share of trading volumes, and the market adjusted fully within one year, government borrowing costs would increase by an additional $230 million.

Thus the $800 million in direct revenues leads only to $545 million in net revenue in the first year of the FTT. Once the bond market had fully adjusted after ten years, $800 million in direct revenues would represent only $327 million in net revenues. This is only one-quarter the amount calculated by multiplying the base by the tax rate. Moreover, 7.5% of net federal revenues in the steady state would be borne by provincial governments.

This is admittedly a rough estimate. Nevertheless it probably overstates federal revenues because the turnover effects for fixed-income securities in Canada could well be greater than the figures used here. The calculation does not take into account the impact of higher borrowing costs on income tax revenues and higher compliance costs. It also ignores the effects of capital losses due to the 10-basis-point tax on equities as well as the loss in Canadian incomes as a result of reducing equity transactions by about $60 billion per year. Nor does the calculation consider government administration costs.

The above discussion suggests clearly that an FTT on equity transactions is a very different creature from an FTT on fixed-income securities. Other countries know this and that is why they have taxed those securities at lower rates than the tax on equities: four basis points in Austria, three basis points in Japan, and three basis points in Sweden. But even these seemingly low rates of tax have proven to be high for that market. The same is true of taxes on short-term securities; Switzerland and Sweden are the only two countries to tax them.

The development of the market was seriously hindered in Switzerland, while a large drop in transactions resulted in Sweden from a 0.2 basis point tax.

Despite the difficulties that might be posed by an FTT on equity transactions, and the possible negative side effects, that is clearly the most suitable base for the tax. As a result of its relatively small size, however, the tax rate must be relatively large to raise a worthwhile amount of income. Once that happens, the negative effects could grow until they outweighed the benefits of the tax revenue.

CONCLUDING REMARKS

In Canada, through the GST and other taxes, we tax a whole host of goods and services. Financial services are not, however, taxed as extensively because of the difficulty in applying a sales tax to that particular base. If we wish the tax system to be neutral in its effect on individual economic choices, however, financial services should be taxed just like other things. Thus there is a legitimate reason for taxing these services.

A long list of prominent analysts have justified FTTs on the grounds that we should tax the "big casino." This argument is in some sense misleading, however. It gives the impression of gambling, speculation and idle activity that might be privately beneficial but socially worthless, or even costly. This is a value judgment and a strong one at that. To the extent that it is valid, it applies only to a small subset of the $11 trillion potential tax base in question. It is not correct to suggest that all financial transactions, or even a large part of them, possess such gambling characteristics, particularly if we consider larger measures of the tax base.

Thus to justify taxing financial transactions needs more than a reference to the "big casino." One obvious justification would be a demonstration that an FTT was a better tax than the one it replaced or helped to replace.

But is the FTT a good tax? The international experience is somewhat mixed in this regard. Japan appears to have successfully maintained an FTT over time and has raised substantial amounts of direct revenue from it. Although these taxes have had some negative effects on the Japanese financial market, the government considers them to be insufficient to

outweigh the benefits. The UK seems to have raised ample revenue while at the same time witnessing a thriving and growing financial industry. Despite this, however, the UK believes that more can be achieved without the tax and has indicated a desire to get rid of it.

Sweden, on the other hand, appears to be a classic example of an experiment gone wrong, while Germany, like many other countries, has decided that the costs outweigh any benefits from this type of tax.

Is Canada more like Sweden and Germany or is it more like Japan? Canada is a small, open economy with very strong capital mobility. It is also a very heavily indebted economy with heavily indebted governments. Japan is the opposite, however, as well as being culturally different from Canada and the rest of the developed world.

While the successful implementation of an FTT depends on a variety of factors, it would be enhanced if our financial markets and their competitors had similar taxes. This is unlikely to be the case for Canada; the United States has not indicated a commitment to such a tax and other countries are moving in the opposite direction. Canadian providers of financial services today face fierce competition from the United States, where costs are lower. An FTT would exacerbate this differential.

There is, however, a further issue that is important in this discussion. FTTs are appealing because of the extremely large size of their potential tax base in relation to the size of the economy. Whether it be $11 trillion, $23 trillion or even $53 trillion, financial transactions dwarf real economic activity, measured at $750 billion. The FTT could be imposed at a very low rate because of this large tax base, and some believe that consequently few distortions would be caused and the tax would be relatively painless.

Whatever kind of tax is employed, the result would be a transfer of real spending power from the private sector to governments. Someone must pay, and not from financial transactions but from income or net assets. In the long-run, GDP is the best measure of ability to pay - the total value of financial transactions is not a measure of ability to pay. Thus a $1 billion tax on $11 trillion of financial transactions reduces the private sector's spending power by as much as a $1 billion tax on something else, even if done in small increments and if hidden from view. Its incidence on individual taxpayers and the consequent effects on the economy might be different, but in the end it is another $1 billion tax on GDP.

An FTT, even at a very small rate, can cause distortions. The financial transactions shown in Table 1 amount to 14 times annual GDP and are almost 100 times as large as the GDP attributed to the finance, insurance and real estate sector. Financial transactions in their broadest sense (i.e., using the $53 trillion estimate) are almost 500 times as large as the value added attributed to the finance, insurance and real estate sectors. Each transaction, therefore, contains only a small amount of value added and would be very sensitive to price and cost.

Economic theory suggests that the burden of an FTT would fall upon those who used financial capital rather than those who supplied it when that capital was highly mobile and when the nation imposing the tax was small and a net borrower. Thus Canadian borrowers would pay the tax, as opposed to Canadian and foreign savers. The largest Canadian borrowers are, of course, our governments.

While the implementation of an FTT would cause existing investors in Canadian financial securities to face a one-time capital loss, future investors could not be forced to bear such costs as long as there were non-taxable alternatives available to them.

Finally, the implementation of an FTT must consider one factor that has received scant attention here. A federal FTT would constitute, to some extent, a direct tax on provincial treasuries. If the tax applied to provincial government securities, it would directly raise the cost of provincial borrowing. If the tax caused asset prices to fall, or if it otherwise raised business costs, it would erode the income tax base of provincial governments and hence lower their revenues. Any federal government considering the implementation of a financial transactions tax might want to take such provincial impacts into account when designing it.

ACCO®

ACCOPRESS™

YELLOW	25070	JAUNE
*BLACK	25071	NOIR*
*BLUE	25072	BLEU*
RL. BLUE	25073	RL. BLEU
*GREY	25074	GRIS*
GREEN	25075	VERT
RUST	25078	ROUILLE
EX RED	25079	ROUGE

ACCO CANADA INC.
WILLOWDALE, ONTARIO

* INDICATES 75% RECYCLED 25% POST-CONSUMER FIBRE

BALANCE OF PRODUCTS 25% RECYCLED

*SIGNIFIE 75 % FIBRES RECYCLÉES, 25 % DÉCHETS DE CONSOMMATION

AUTRES PRODUITS: 25 % FIBRES RECYCLÉES


0 50505 25079 0